

CLAIMS:

1. A rail fastener driver apparatus for driving fasteners into ties of a railroad track, comprising:

a fastener driving mechanism with a reciprocating element for engaging a fastener and driving it into a tie;

5 a fastener magazine configured for accommodating a plurality of rail fasteners and feeding them sequentially for driving by said element;

a fastener feeder mechanism including a fastener holder configured for movement between a first position sequentially receiving one said fastener from said magazine and a second position placing the fastener in a driving position

10 for engagement by said driving element; and

said fastener feeder mechanism configured for lowering and axially rotating said at least one fastener from said first position to said second position.

2. The apparatus of claim 1 in which said fastener feeder mechanism is configured for simultaneously lowering and axially rotating said at least one fastener from said first position to said second position.

3. The apparatus of claim 2 in which said fastener feeder mechanism includes a fluid power cylinder with a grooved shaft configured for rotating while reciprocating.

4. The apparatus of claim 3 wherein said grooved shaft is configured to rotate approximately 90° between a retracted position and an extended position.

5. The apparatus of claim 1 wherein said fastener feeder mechanism is configured for moving between said first and second positions while said apparatus moves relative to the track.

6. The apparatus of claim 5 wherein said apparatus has a direction of travel along the track, and said fastener holder is biased in the direction of travel against obstructions.

7. The apparatus of claim 6 wherein said fastener holder is biased in the direction of travel in said second position.

8. The apparatus of claim 6 wherein said fastener holder includes a jaw mount pivotable on an axis transverse to the direction of travel and is biased to an operational position.

9. The apparatus of claim 8 wherein said fastener holder further includes a pair of reciprocating fastener holding jaws mounted to said jaw mount support for holding a fastener.

10. The apparatus of claim 6 wherein said fastener holder includes a pair of opposed jaws exerting a gripping force on the fastener, and said fastener holder is biased to said second position against overload protection in a direction transverse to said gripping force.

11. A rail fastener driver apparatus for driving fasteners into ties of a railroad track, comprising:

a frame configured for movement in a specified direction of travel along the track;

5 a fastener driving mechanism connected to said frame and provided with a reciprocating element for impacting a fastener and driving it into a tie;

a fastener magazine configured for accommodating a plurality of rail fasteners and feeding them sequentially for driving by said element;

10 a fastener feeder mechanism including a fastener holder configured for movement between a first position receiving a fastener from said magazine and a second position placing the fastener in a driving position for engagement by said driving element; and

15 said fastener holder configured for biased, pivotal movement relative to said feeder mechanism for accommodating obstacles encountered while said frame travels upon the track.

12. The apparatus of claim 11 wherein said fastener holder is biased in the direction of travel of said frame along the track.

13. The apparatus of claim 11 wherein said fastener holder includes a jaw mount support pivotable on an axis transverse to the direction of travel and is biased to an operational position.

14. The apparatus of claim 13 wherein said fastener holder further includes a pair of reciprocating fastener holding jaws mounted to said jaw mount support for holding a fastener.

15. The apparatus of claim 11 wherein said fastener holder includes a pair of opposed jaws exerting a gripping force on the fastener, and said fastener holder is biased to said second position against overload protection in a direction transverse to said gripping force.

16. A method of driving rail fasteners into tie plates and ties of a railroad track, comprising:

providing a rail fastener driving apparatus with a fastener driving mechanism and provided with a reciprocating element for impacting a fastener and
5 driving it into a tie, a fastener magazine configured for accommodating a plurality of rail fasteners and feeding them sequentially for driving by said element, a

fastener feeder mechanism including a fastener holder configured for movement between a first position receiving at least one fastener from said magazine and a second position placing the at least one fastener in a driving position for engagement by said driving element, said fastener holder being pivotally biased 5 relative to said feeder mechanism for accommodating obstacles encountered while traveling along the track in the first position ;

driving with the driving element a fastener supplied by the magazine to the fastener holder;

retracting the driving element and the feed mechanism to the first 10 position;

one of loading another fastener into the fastener holder and moving the apparatus along the track;

the other of loading another fastener into the fastener holder and moving the apparatus along the track;

15 moving the fastener holder with a fastener to the second position for engagement by the driving element;

stopping the apparatus on the track;

finding a hole suitable for driving a fastener; and

driving the fastener in the fastener holder using the driving element.

17. A jaw mount suitable for use with a rail fastener driving apparatus with a fastener driving mechanism and provided with a reciprocating element for impacting a fastener and driving it into a tie, a fastener magazine configured for accommodating a plurality of rail fasteners and feeding them sequentially for driving by said element, a fastener feeder mechanism including a fastener holder configured for movement between a first position receiving a fastener from said magazine and a second position placing the fastener in a driving position for engagement by said driving element, comprising:

a generally planar body with a first, generally wide end having a pivot bore, a second end offset from said first end in a dogleg configuration;

10 a central section provided with a mount for a spring rod;

said second end being narrower than said first end, with said central section tapering therebetween, and said second end provided with a jaw mount aperture.

18. A jawblock assembly for use with a rail fastener driving apparatus with a fastener driving mechanism and provided with a reciprocating element for impacting a fastener and driving it into a tie, a fastener magazine configured for accommodating a plurality of rail fasteners and feeding them sequentially for driving by said element, a fastener feeder mechanism including a fastener holder configured for movement between a first position receiving a

fastener from said magazine and a second position placing the fastener in a driving position for engagement by said driving element, comprising:

a main jawblock body having a generally "I"-shape when viewed

10 from the front and provided with a first and second side;

a pair of jaws, one configured for attachment at each of said sides and having a pivot end, a vertical throughbore for a pivot pin and a fastener engagement end; and

said pivot ends of said jaws being pivotally engaged on said

15 corresponding sides.

19. The jawblock of claim 18 further including at least one spring for biasing said fastener engagement ends together.

20. The jawblock of claim 19 wherein said at least one spring is connected at one end to said jawblock and at an opposite end to said corresponding jaw.

21. A jaw for use in a rail fastener driving apparatus with a fastener driving mechanism and provided with a reciprocating element for impacting a fastener and driving it into a tie, a fastener magazine configured for accommodating a plurality of rail fasteners and feeding them sequentially for 5 driving by the element, a fastener feeder mechanism including a fastener holder

configured for movement between a first position receiving a fastener from the magazine and a second position placing the fastener in a driving position for engagement by the driving element, and a jawblock on said fastener holder for releasably retaining the fastener, said jaw comprising:

10 a generally "T"-shaped configuration with a relatively narrow pivot end and a relatively wider free end opposite said pivot end, a throughbore disposed between said ends for pivoting action relative to the jaw block.